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**Natarajan**

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(54) **USING A MICROFLUID MIXER**

(75) Inventor: **Govindarajan Natarajan,**  
Poughkeepsie, NY (US)

(73) Assignee: **International Business Machines Corporation,** Armonk, NY (US)

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See application file for complete search history.

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*Primary Examiner* — Tony G Soohoo

(74) *Attorney, Agent, or Firm* — Cantor Colburn LLP;  
Matthew Zehrer

(57) **ABSTRACT**

A method includes directing first and second fluids into a plurality of first ports fluidly connected to a mixing chamber disposed between a first plate and a base plate, guiding the first and second fluids into a mixing chamber, directing the first and second fluid into a plurality of second ports fluidly connected to the plurality of first ports, guiding the first and second fluids from the plurality of second ports into another mixing chamber disposed between a second plate and the first plate and fluidly connected to the mixing chamber, activating a heating element to heat one of the first and second fluids entering the mixing chamber, creating a temperature gradient between the first and second fluids entering the mixing chamber, and operating a diaphragm operatively associated with the mixing chamber and the another mixing chamber to agitate the first and second fluids to form a fluid mixture.

**8 Claims, 8 Drawing Sheets**

